

# **COLUMBIA RIVER REGIONAL FORUM TECHNICAL MANAGEMENT TEAM**

April 4, 2007 Meeting

## **FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS**

Facilitator: Robin Harkless

Notes: Erin Halton

The following notes are a summary of issues that are intended to point out future actions or issues that may need further discussion at upcoming meetings. These notes are not intended to be the "record" of the meeting, only a reminder for TMT members.

### **TMT Meeting Minutes / 2007 Meeting Schedule**

Jim Adams, COE, reported that the revised versions of the facilitator's summary and official meeting minutes had been posted to the TMT website the morning of 4/4. TMT members added that the dates identified on the 2007 meeting calendar needed to be corrected/updated.

**Action:** Jim Adams, COE, said he would correct the dates scheduled for meetings on the TMT website.

### **Priest Rapids Operations Update**

Russell Langshaw, Grant County PUD, updated TMT on Priest Rapids operations; he reported that there had not been a drop below the 70 kcfs critical elevation, that the temperature units were around 1000, and that protective flow bands began at 0001 hours on 4/4.

**Action/Next Steps:** Langshaw will post a summary with graphs and updates on flow bands before the 4/18 TMT meeting and will provide information on the flow protection operation at the meeting.

### **Little Goose Outages**

Don Faulkner, COE, reported that a lock outage for repair of the upstream gate should be done by the end of April / 1<sup>st</sup> of May. Starting April 4<sup>th</sup>, night time lockages using the floating bulkhead will be available. Multiple unit line outages will occur on April 11<sup>th</sup> – 12<sup>th</sup>.

### **MOP Operations Report**

Jim Adams, COE, referred to a graph linked to the TMT agenda, showing spill and MOP operations initiation Little Goose, Lower Monumental, Lower Granite and Ice Harbor. Bernard Klatte, COE reported on temporary fluctuations of forebays at those projects, and said that levels were equalized by the afternoon of 4/3.

### **Lower Monumental Spring Spill**

Bernard Klatte, COE, presented on recommended spill patterns to allow for bracket work and a 4-hour spillway outage on 4/14, for installation of hydrophones at Lower Monumental. A table was linked to the TMT agenda following the meeting, showing this pattern, developed by the Walla Walla district and implemented in 2004. Klatte noted that the recommended pattern would be the most beneficial for hatchery yearling Chinook. TMT members present at the meeting did not object to this pattern.

### **Transport Operations for Research Studies**

Paul Wagner, NOAA, informed TMT of two minor variations to the transport dates (4/20 – 5/1) scheduled in the Fish Operations Plan: research studies require barge transport out of Lower Granite on 4/12 and 4/19. Wagner clarified that these dates are for additional research and said that he would summarize the schedule for tagging/transport in a table for TMT and FPAC reference.

**Action/Next Steps:** Wagner will discuss the schedule with TMT at the 4/18 meeting.

### **April 3 ESP Results**

Cathy Hlebechuk, COE referred TMT to several graphs linked to the TMT agenda, showing the most recent data on flows and volumes predicted for Libby and Dworshak for the April-August periods. Randy Wortman, COE, clarified that the data shown was updated with the ‘April final forecast.’ Hlebechuk noted that the COE is working on long term risk analysis that will help capture the ‘extreme event’ and acknowledged that there is work to be done on improving these prediction models. John Roache, BOR, added that he expected the April final forecast for Hungry Horse to be between 84-86% of normal.

### **Water Management Plan Spring/Summer Update**

Bernard Klatte, COE, said that the draft spring summer update to the WMP was posted on the TMT website. He added that he was still working on including research information to the update. USFWS, CRITFC and NOAA said they all plan to submit comments.

**Action:** Klatte asked TMT members to submit their comments by no later than 4/16, so that an inclusive update may be provided to IT at their 5/3 meeting.

### **Lower River Spill Start**

Jim Adams, COE, reported that spill on the Snake River began at 0001 hours on 4/3, and that two operations: spill on the Lower Columbia and “lowest elevation+ 1.5” at John Day, would start at 0001 hours on 4/10. Cathy Hlebechuk, COE, and Rick Kruger, OR, gave TMT a ‘head’s up’ that there may be an SOR submitted again this year by towboaters for special operations at Lower Monumental and Lower Granite for navigation safety.

### **Dworshak Operations**

Cathy Hlebechuk, COE, referred TMT to graphs linked to the TMT agenda that showed Dworshak operation scenarios: 1.78 maf, 1.98 maf, and 2.24 maf. She said that given Dworshak’s current forecast of 1.85 – 2.75 maf, the shifted flood control elevation for 4/15 is 1582.1', and the unshifted flood control elevation for 4/30 is 1572.6'. Greg Haller, Nez Perce Tribe, expressed concern for a potential drop in flows in June, and Hlebechuk agreed that depending on May and June flow rates and shape, outflows in May will likely be higher than June for refill.. Salmon Managers held a caucus to discuss their preferred operation for the next week, and recommended outflows of 2.5 kcfs with a check-in on 4/11 to look at inflows and elevations.

#### **Action/Next Steps:**

- The COE will operate Dworshak at 2-2.5 kcfs (one small unit), per the Salmon Managers’ recommendation, with the caveat that spilling may be necessary to meet end of April target flood control elevations, and potentially exceed Idaho’s water quality standards.

- Russ Kiefer, ID, said that FPAC's review of the information did not indicate this operation for a week posed a significant risk of having to spill to that level, but requested that if the COE saw conditions that indicated this may be an issue, to please coordinate with FPAC as soon as possible.
- TMT will discuss the current flows and forecasts during a conference call on 4/11.

### **Operations Review**

*Reservoirs* – Grand Coulee was at 1264.1', and drafting to meet the interpolated 4/10 upper rule curve elevation target of 1259.2'. Hungry Horse was at 3535.4', releasing 5.2 kcfs and preparing to adjust outflows, if necessary, once the April final forecasts are released. Libby was at 2395.5', with inflows of 11 kcfs. To emphasize the sensitivity around forecasts, Cathy Helebechuk, COE, noted that if 6.8 maf is forecasted for Libby, the end of April target elevation will be 2381.2', and if 7.0 maf is predicted, the target will be 2370.3'. Dworshak was at 1561.85, with outflows at 4.3 kcfs. Albeni Falls was operating between 2054' – 2055' and spilling to meet the 4/30 target elevation of 2056'. Priest Rapids was averaging between 133-230 kcfs, and Bonneville flows were at 290 kcfs.

*Fish* – Paul Wagner, NOAA, referred TMT to the Fish Passage Center website and noted that passage numbers have increased overall. Lower Granite and Rock Island passage numbers reached into the 1,000 per day range. Bonneville is continuing seeing steady passage. Bernard Klatter, COE, reminded TMT of the 'other fish related docs' link from the TMT homepage for weekly status reports on sea lion activity below Bonneville.

*Power* – Tony Norris, BPA, said that the higher flows out of Grand Coulee created lower temperatures and excursions from the 1% at McNary, John Day and Bonneville, and said that BPA was working hard to ensure that this does not happen again.

*Water quality* – Jim Adams, COE, reported no TDG exceedances and said that spill caps on the Snake River would be set for below 120%, in anticipation of higher gas levels/spill. Adams said there had been some high TDG levels coming out of the mid-Columbia. Wanapum and Priest Rapids were spilling a high percentage of the river due to instrument installation in preparation for future research studies.

### **Next Meeting will be a Conference Call on April 11<sup>th</sup> at 9am**

Agenda items include:

- Start of Lower Columbia Spill
- Dworshak Operations
- April Final Forecasts / New Flood Control Elevations
- WMP: Spring/Summer Update – Comments due by 4/16
- Operations Review

**Columbia River Regional Forum  
Technical Management Team Meeting  
April 4, 2007**

**1. Welcome and Introductions**

Today's TMT meeting was chaired by Cathy Hlebechuk and facilitated by Robin Harkless, with representatives from COE, BOR, USFWS, BPA, Montana, Idaho, Oregon, NOAA-F, NWRP, and PNGC attending in person or by phone. The following is a summary (not a verbatim transcript) of the topics discussed and decisions made at the meeting. Anyone with questions or comments about these notes should provide them to the TMT chair or bring them to the next meeting.

**2. Review of Meeting Minutes**

Review of the 3-28-07 official minutes was postponed until the next meeting.

**3. Priest Rapids Update**

It's been another uneventful week since the last report, Russell Langshaw (Grant County PUD) said. The reservoir didn't drop below critical elevation, and temperature units were around 1,000. Last year's summary pages for updates were very useful, Kyle Dittmer (CRITFC) said. Grant County PUD is planning to use the same report format as last year, with graphs and summaries.

**4. Little Goose Outages**

Don Faulkner, COE, reported that a lock outage for repair of the upstream gate should be done by the end of April / 1<sup>st</sup> of May. Starting April 4<sup>th</sup> night time lockages using the floating bulkhead will be available. Multiple unit line outages will occur on April 11<sup>th</sup> – 12<sup>th</sup>.

**5. MOP Operations Report**

Jim Adams (COE) presented two graphs (which are linked to the agenda for today's meeting on the TMT web page) showing progress toward achieving MOP elevations at Lower Granite and Little Goose. Lower Granite reached MOP on April 2, Little Goose reached MOP on April 1, and Lower Monumental reached MOP on April 2 prior to initiating spill April 3.

**6. Lower Snake Spill – April 3, 2007**

On Monday morning, April 2, the control room operator at Little Goose had to manually enter forebay elevations into the computer because a technician working on calibrating the automated GDACS system, Bernard Klatte (COE) said. Because this

was a departure from the normal automated operation and the operator was distracted from this task, the forebay elevation dropped below MOP of 633-634 feet elevation. BPA schedulers received incorrect information (received via computer) and managed the system accordingly. This created problems at all the other projects downstream of LGS resulting in fluctuating spill volumes to maintain MOP. At present, all projects are at MOP and spilling what they should be spilling. Dropping below MOP is a navigational issue, not a power generation or a flood control issue.

## ***7. Lower Monumental Spill Pattern***

Bracket work for the RSW will be ending on April 13, and the schedule is proceeding as planned, Klatte said. In the process of doing this work, a cable snapped and equipment became stuck in bay 8, a problem that will take 40 to 60 days to fix. To compensate for the loss of bay 8, the COE Walla Walla district office devised a spill pattern that, while it departs from the Fish Passage Plan, was found in 2004 to produce good survival estimates for yearling Chinook – 96% for spill, 88% for turbine passage, and 92% for the bypass system. Klatte will post information on the new spill pattern as soon as he receives it from the Walla Walla district.

Due to the start of spill on April 3, the Walla Walla COE district office was unable to install equipment in the forebay at Lower Monumental and has requested a four-hour spill outage on the morning of April 14, Klatte said. The purpose is to install hydrophones for research, assuming the contractor has finished the bracket work and removed its flotilla of barges on April 13.

## ***8. Transport Operations for Research Studies***

The Fish Operations Plan sets a timeframe of April 20 through the end of May for transport to begin, as determined by TMT, Paul Wagner (NOAA) said. One aspect of transportation is research. A number of the studies that have received regional approval require transport to start earlier than April 20. The first is on April 12 at Lower Granite, then another on April 19. The goal is to make the transportation operations for research as efficient as possible by consolidating the tagging, collection and transportation of fish for several studies simultaneously.

TMT members expressed interest in hearing an update on this at the April 18 meeting. Wagner is assembling a table that summarizes the dates of transport and studies involved, which he will send to TMT members prior to the discussion. He is also planning to present this information to FPAC.

## ***9. April 3, 2007 ESP Results***

Cathy Hlebechuk (COE) presented Libby ESP hydrographs showing this week's information, as of yesterday. The water supply forecast traces vary a lot, from over 80 kcfs to 4 kcfs of inflows for April-July. The second graph shows actual volumes for Libby

and Dworshak produced by the shapes in the first graph. The spread for the second graph is 5.9 - 9.6 maf for April-August.

These graphs are simulated forecasts for 2007, showing what is most likely to happen under current conditions, Hlebechuk said. Using this tool, COE made a preliminary water supply forecast for April-August this year of 6.795 maf, a simulation based on historical weather. That represents an increase over last month's forecast of 6.516 maf, as quoted in the WMP spring/summer update.

Last year's ESP analysis showed nothing like what actually happened, Hlebechuk said. There was a huge runoff in June, and then flows dropped, so it turned out to be an average year. Because ESP analysis can't capture extreme events, COE has been working on risk analysis to address that potential.

For the first 10 days of April, the model uses the RFC forecast, so all 45 years have the same forecast for the first 9 days and have identical values, Randy Wortman (COE) said. After that, historical averages are blended. This is when the current Weather Service models have the best information.

For Dworshak reservoir inflow in April-July of this year, the ESP model comparing RFC and COE forecasts shows the two forecasts were closer this week than last week, with ESP averages showing a bit more volume. The second Libby volume forecast linked to today's agenda gives the updated RFC forecast. The ESP and STP forecasts were in close agreement in the graph for Hungry Horse as well. BOR hasn't finalized its forecast yet, but the official estimate will probably be lower than ESP volumes, around 84-86%,

## **10. Dworshak Operations**

RFC does ESP forecasting for Dworshak every week, with the first 10 days of the model based on the current forecast, Greg Haller (Nez Perce) said. After that point, 44 years of temperature and precipitation data are overlaid on initial snow and soil conditions to create 44 different possible volumes for each week. For this week, the ESP variation of volumes was 1.85-2.75 maf (according to the fourth table, linked to topic #9 on today's TMT agenda). The STP volume according to the 1982 final COE April forecast was 2.138 maf, and RFC's early bird forecast was 2.23 maf.

The third table attached to agenda item #9 shows ESP hydrographs for Dworshak, overlaying temperature and precipitation on snow.

COE ran three different scenarios to reach the April 15 shifted flood control elevation of 2,182.1 feet, Hlebechuk said. The project is trying to reach the end of April unshifted elevation of 1,572.6 feet. The current April forecast is 1.98 maf, Hlebechuk said. After April 30, COE doesn't have flood control targets but goes into refill mode. In this case, flows were higher in May, and COE didn't want the reservoir to refill too soon, as it did under the third scenario yielding 2.24 maf, which released 4,300 cfs to reach

the target elevation. Under the 1.98 maf scenario, flows were also higher in May than in June. Also, snowmelt could be a factor, which in the past has been controversial. The April 15 shifted flood control elevation is 1,582.1 feet, and the unshifted end of April elevation is 1,572.6 feet, given current conditions. COE doesn't interpolate April 10 elevations, Cindy Henriksen said.

The previous week, the salmon managers had voiced a preference for more water during the last half of April, while avoiding the need to spill above the gas caps to get down to flood control elevations. The salmon managers caucused during a break from today's meeting and agreed to a Dworshak operation of 2 - 2.5 kcfs outflows, using one of the smaller units, in an effort to provide greater flow volumes during increased fish migration at the end of April. They agreed to revisit this decision no later than a week from now, and earlier if there is any indication that the risk of spilling could exceed Idaho water quality standards. Hlebechuk emphasized that the COE will spill during the last half of April if needed to get to flood control elevations, even if that exceeds the gas caps. On the flip side, if inflows are low, Dworshak might not reach its desired April 10 elevation.

### ***11. Water Management Plan Spring/Summer Update***

USFWS, CRITFC and NOAA all plan to comment on the draft WMP spring/summer update (posted at <http://www.nwd-wc.usace.army.mil/tmt/documents/wmp/>). No one has commented on it yet, Klatte said. The IT will receive the WMP draft at its May 3 meeting, after TMT members have had an opportunity to review and comment. Hlebechuk will email it to Jim Ruff (NPCC), who co-chairs the IT. The goal is to finalize the plan by May 9.

### ***12. Start of Lower Columbia River Spill***

Spill started at 12:01 on April 3 on the Snake, Adams said. At 12:01 on April 10, spill will start on the Columbia, as per the Fish Operations Plan. The 75 kcfs of daytime spill planned for summer releases may increase to 83 - 85 kcfs. This is potential summer spill vetted outside this process, which will come back to TMT for further consideration.

There is a possibility COE will need to reduce or eliminate spill for navigation purposes at John Day, Hlebechuk said. This issue has been dealt with via SORs for other projects, but John Day has consistently been a problem, so this year it was coordinated in the FPP.

Rick Kruger gave TMT a heads-up that ERDC tugboats have been at The Dalles, Lower Monumental and McNary to deal with residual problems in spill patterns at navigation locks. Only the lowest level at Lower Monumental was a problem. A report or an SOR might come out of that investigation regarding the start of spill April 10 on the lower Columbia.

Coincidentally, irrigation operations +1.5 feet will start at John Day that same day, Hlebechuk said. The elevation is 62.5 – 64 feet, sometimes called MIP. The group agreed to check in on the start of Lower Columbia spill operations at the next TMT meeting. If we have a gusher at the end of April, all the careful planning TMT has done might not make a difference, Hlebechuk said.

### **13. Operations Review**

**A. Reservoirs.** Grand Coulee is at elevation 1,264.1 feet, dropping to the April 10 target elevation of 1,259.2 feet, John Roache (BOR) said. Reclamation interpolates between March 31 and April 15 elevations to get the April 10 target, based on the March final forecast. It has been difficult drafting enough from Grand Coulee to keep up with inflows.

Hungry Horse is at elevation 3,535.4 feet, discharging about 5.2 kcfs. BOR is waiting for the April final forecast and will adjust the discharge volume at that time.

Libby is at elevation 2,395.5 feet, with inflows of 11 kcfs. COE is trying to pass inflows because the March final forecast and April 30 target elevations are the same. That will change when the new forecast becomes available. If the forecast is 6.8 maf for April-August, the target elevation will be 2,381.2 feet, to be achieved as soon as possible. To demonstrate the sensitivity of forecasts to even slight variations in inflows, a forecast of 7 maf would yield a target elevation of 2,370.3 feet, or 11 feet lower, Hlebechuk said.

The TMT discussed the role of the International Joint Commission in predicting flows from Canada. The first or second week of April is usually when a freshet is declared if it will be, Russ Kiefer (Idaho) said. TMT members expressed concern that runoff is occurring earlier than usual this year, and the Northwest could see a rapid change in flows if the April-August forecast is 6.8 maf or higher. Hlebechuk will email the IJC agreement with Canada to TMT members.

There was a typo in the sturgeon volume for Libby which was corrected in a second email to TMT members, Haller said. COE operates to very strict rules regarding VARQ flows, bull trout flows starting May 1, and the sturgeon pulse when it is requested, Hlebechuk said. Because COE operates to General Martin's determination and findings, there is no need for a presentation on this subject at TMT, Hlebechuk and Haller agreed.

Dworshak is at elevation 1,561.85 feet, with 8.3 kcfs inflows and 4.3 kcfs outflows. The reservoir increased 4 feet in elevation on April 3.

Lower Granite inflows are receding, currently in the 40-43 kcfs range. A temperature change might cause an increase.



Ice Harbor is running about 65-70 kcfs of inflows. Bonneville has been discharging around 290 kcfs. Priest Rapids was at 133 – 230 kcfs daily average for the last five days. Albeni Falls filled above elevation 2,053 feet and has been spilling a lot of water.

Cranes at McNary and Lower Monumental. The crane at McNary is coming back online, which means TSW#1 can be installed in bay 22 as recommended by ERDC, Bernard Klatte (COE) said. The installation will be followed by fish tests and balloon tag releases, with spill starting April 10. Hopefully, Lower Monumental will be able to spill according to the pattern outlined in the Fish Passage Plan, despite problems with bay 8.

**B. Fish.** Fish are still moving down through the tributaries, Paul Wagner (NOAA) said. In the past few days, the numbers passing went from the hundreds to the thousands on the Imnaha. Lower Granite saw its first thousand-fish day of 2007. Bonneville is still in the hundreds for passage of steelhead yearlings. There is nothing yet to report regarding adult migration.

The weekly marine mammal report has been posted at [http://www.nwd-wc.usace.army.mil/tmt/documents/fish/2007/sea\\_lion\\_hazing.html](http://www.nwd-wc.usace.army.mil/tmt/documents/fish/2007/sea_lion_hazing.html), Klatte (COE) said. C404 has shown up again, a little bigger than he was last year, and the rascal has gotten into the Bonneville fishway – despite the sea lion exclusion device installed there.

**C. Power.** It has been difficult moving large volumes of water out of Grand Coulee, Tony Norris (BPA) said. BPA staff had a difficult weekend beginning with errors in scheduling releases on the lower river Sunday night in connection with MOP elevation problems on the lower Snake. Temperatures the following Monday and Tuesday were 6 degrees cooler than expected, which changed the BPA load forecast dramatically. As a result of all these factors, there were TDG exceedances on the lower river for about 3-5 hours on the morning of April 2.

**D. Water Quality.** COE has set spill caps to be below 120% in the tailwater because TDG levels in forebays are expected to rise within a few days, Adams said. So COE is waiting for equilibrium to be established on the river. There have been no exceedances on the Snake. However, TDG levels below Wanapum peaked at 131.9% on April 1 and dropped to 123% by the next afternoon. TDG levels at Priest Rapids have been around 120% and around 116% in the Pasco area. COE is concerned about depth compensation for redds downriver.

## **9. Next TMT Meeting**

The next meeting is a conference call scheduled for April 1, 2007. Agenda items will include the start of spill on the Lower Columbia, final April forecast information, an update on transport operations for research, newly computed flood control elevations, and the usual operations review. This meeting summary was prepared by consultant Pat Vivian.

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